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HISTORICAL FUND
of the
NAVY MEDICAL DEPARTMENT

A committee has been formed with representation from the Medical Corps, Dental Corps, Medical Service Corps, Nurse Corps, and Hospital Corps for the purpose of creating a fund to be used for the collection and maintenance of items of historical interest to the Medical Department. Such items will include, but will not be limited to, portraits, memorials, etc., designed to perpetuate the memory of distinguished members of the Navy Medical Department. These memorials will be displayed in the Bureau of Medicine and Surgery and at the National Naval Medical Center. Medical Department officers, active and inactive, are invited to make small contributions to the fund. It is emphasized that all donations must be on a strictly voluntary basis. Funds received will be deposited in a Washington, D. C. bank to the credit of the Navy Medical Department Historical Fund, and will be expended only as approved by the Committee or its successor and for the objectives stated.

It is anticipated that an historical committee will be organized at each of our medical activities. If you desire to contribute, please do so through your local historical committee or send your check direct, payable to Navy Medical Department Historical Fund, and mail to:

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Glaucoma

Recently, considerable attention has been focused on glaucoma. Attempts have been made to make the public aware of the widespread occurrence of this condition and to alert them to its danger signs. Because the subject is not generally familiar to physicians other than ophthalmologists, the authors thought a report might be helpful that would bridge the gap between oversimplification of the subject and the technical and detailed papers that appear in ophthalmologic writings.

Definition. Glaucoma is usually considered to be "high pressure within the eye." Yet, glaucoma may exist without "high pressure." A more accurate definition is presented by Sir Stewart Duke-Elder—"that pressure which the tissues of the particular eye in question are not able to withstand without damage to their structure or impairment of their function."

Classification. Glaucoma is primarily divided into secondary and primary, or into those in which the cause is apparent and those in which the cause has yet to be found. Primary glaucoma has suffered from lack of knowledge of etiology; thus, many classifications have been proposed based on clinical description, anatomic discrepancies, and clinical course of the disease. With introduction of new and better instruments, primary glaucomas are now classed as either open or closed (or narrow) angle.

Pathogenesis. Glaucoma almost always results from a decrease in the outflow or absorption of aqueous from the anterior chamber of the eye, and the character of the disease depends on the location and extent of blockage of the outflow channel.

Closed-angle glaucoma results when the iris comes into contact with the trabecular region. Repeated episodic rises in tension lead to progressive formation of anterior peripheral synechia, and outflow of aqueous from the eye becomes permanently impaired. When synechiae are first formed, they are easily broken if the pupil is constricted, but if allowed to remain, they soon become thickened and fibrous. Increased intraocular pressure in the acute attacks results in edema of the cornea with loosening of corneal epithelium and formation of bullae. In long-standing glaucoma the iris atrophies and becomes fibrotic. Permanent functional damage to the eye results from increased pressure at the optic disc. Along with degeneration of the nerve fiber there is degeneration of the ganglion-cell layer and nerve-fiber layer of the retina.

In open-angle glaucoma—not characterized by acute attacks—examination usually reveals adequate separation of the iris root and trabecula. Peripheral anterior synechiae are almost always absent. However, there is an early decrease in aqueous outflow—the block must exist in the trabecula, Schlemm's canal, or the aqueous veins. In this type, examination has revealed sclerosis of the sclerocorneal trabeculae that often is marked enough to block the passage of aqueous from the chamber to Schlemm's canal. The

cornea generally does not suffer the damage that it does in closed-angle glaucoma and will tolerate insidious rise in tension without marked pathologic changes. The posterior segment does not fare as well, but, in time, will show excavation of the optic disc with atrophy and disappearance of the retinal ganglion cells and nerve fibers.

Secondary glaucomas are the result of many different primary causes, usually blockage of aqueous circulation by mechanical means. Adhesions may form, constricting the anterior chamber or securing the iris to the lens with seclusion of the pupil and iris bombé formation. Secondary glaucoma may follow an acute or chronic course; the effects on the structures of the eye are similar to those resulting from primary glaucomas.

Diagnostic Procedures. Tonometry reveals increased globular pressure with slowly falling tension on sustained application of the instrument. Visual field studies not only establish the presence of the disease, but also measure its progress, estimate its prognosis, and assess the value of treatment. Examination of the angle of the anterior chamber by gonioscopy is of particular importance in the study and classification of glaucoma.

Occasionally, provocative tests—of which there are many—are employed to support the diagnosis. However, all provocative tests deal with only one symptom of glaucoma—ocular hypertension. Therefore, their value is limited.

Clinical Features. Open-angle glaucoma develops insidiously; it is characterized by vague changes in vision over several years, necessitating frequent changes in glasses. A typical case may present progressive dimness of vision, defective side vision, and progressive difference in the two eyes. Careful examination will reveal the true nature of the disease state.

In striking contrast, the patient who has narrow-angle glaucoma presents a history of episodes characterized initially by irregularly occurring rises in tension associated with transient appearance of halos and mistiness of vision. These may culminate in an acute unremitting attack of elevated tension. On the other hand, there may be just one acute attack with no prodromata. In the acute attack there is excruciating pain in the frontal region, which often radiates down over the face and into the jaw. Nausea and vomiting accompany this severe pain, and constitutional disturbances are marked, giving rise to bradycardia, pallid face, and cold extremities. Profuse lacrimation is present, and vision is affected rapidly if the disease is of rapid onset. Visual acuity ranges from foggy vision to faulty light perception.

Once again, examination reveals findings that are diagnostic.

Differential Diagnosis. Differentiation of primary from secondary glaucoma is obligatory from the viewpoint of therapy. In preliminary examinations, diseases of the eye which cause intraocular hypertension must be identified or ruled out.

Therapy. Management of glaucoma presents one of the most difficult problems that confront the ophthalmologist. Open-angle glaucoma requires

measures that will either enhance the outflow, or reduce the production, of aqueous. Closed-angle glaucoma is treated by steps that prevent angle-blockage. Secondary glaucoma therapy must be directed toward specific factors causing the glaucoma.

One of the most important things in the treatment of glaucoma is early detection. From this standpoint, routine eye examinations by qualified examiners are emphasized in patients over 40 years of age and in those who have a family history of glaucoma.

Medical treatment of glaucoma is more desirable when indicated and should be continued as long as it adequately controls the glaucoma. Surgical treatment is indicated in angle-blockage glaucoma, in cases that are not adequately controlled by medical management, and in cases in which the patient is uncooperative or unreliable. At times, both surgical and medical treatment must be combined to satisfactorily control a given case.

Among the medical measures, miotic drugs are still the most important. There are three main groups of miotics currently used—cholinergic, anticholinesterase, and pilocarpine. Used in certain combinations, they may have a synergistic action resulting in greater therapeutic effect.

In the past few years, advent of carbonic anhydrase inhibitors has revolutionized the treatment of glaucoma. Acetazolamide is representative of this group of drugs. Its therapeutic benefit is due principally to diuresis and reduction of aqueous formation.

The parasympathetic blocking agents, represented by atropine, scopolamine, and their synthetic alkaloids, have a definite role in glaucoma therapy, particularly secondary glaucoma. They are used primarily for their mydriatic effect as are adrenergic drugs which are used primarily in secondary glaucoma. Sedation at times may be required during the acute attack in closed-angle glaucoma and, occasionally, in secondary types. However, since the advent of carbonic anhydrase inhibitors, the need for any prolonged use of sedation or retrobulbar injection of procaine anesthesia in acute attacks of closed-angle glaucoma and paracentesis in secondary glaucoma have practically fallen into disuse.

Surgical management takes an important place in therapy of certain types of glaucoma. Angle-blockage is usually permanently cured by relieving the blockage simply by making a communication between the anterior and posterior chambers. Wide-angle glaucoma requires some supplemental method of outflow of aqueous. This is accomplished surgically either by the internal or external filtration method. The cyclodiathermy procedure surgically reduces the ability of the ciliary body to produce aqueous.

How long one should temporize with non-surgical therapy is debatable. Medical treatment should be continued as long as tension is falling or until it becomes stabilized. Prolonged use of carbonic anhydrase inhibitors is not recommended because it tends to hold the tension down without relieving the

angle block and thus predisposes to further obstruction of previously serviceable filtration areas. As soon as optimal medical control has been achieved, a surgical procedure should be accomplished. (Walter Patterson CAPT MC USN, L. Quentin Myers CDR MC USNR, Gerald D. Faulkner LT MC USN, What is Glaucoma? Med. Ann. District of Columbia, XXIX: 18-27, January 1960)

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Surgical Management of Arterial Peripheral Vascular Disease

One of the exciting recent episodes in the field of surgery was the application of direct surgical techniques to diseases of the aorta and peripheral arteries. Although the underlying physiologic disturbances related to occlusive and spastic disease of the peripheral vessels are still poorly understood, many patients now can gain symptomatic relief and retain limbs for prolonged periods as a result of direct surgical measures recently developed.

Atherosclerosis Obliterans. The best results of surgical management are associated wiht the treatment of occlusive disease of the aorta and peripheral vessels. Atherosclerosis obliterans most commonly affects the abdominal aorta distal to the renal vessels, and the iliac, femoral, and popliteal arteries; but it has been noted in almost every other medium-sized artery in the body. Thrombi form at the site of ulcerated plaques, and the occlusive process results in ischemia of tissues supplied by the vessel.

Symptoms of arterial insufficiency are largely confined to the lower extremities, but depend to a great extent on the location of the most proximal obstructing lesion and on the degree of collateral circulation around the obstruction.

Physical findings consist of diminished or absent peripheral arterial pulsations, loss of hair, atrophy of skin and muscles, and, occasionally, gangrene of the skin. Most cases can be accurately diagnosed on the basis of the patient's history and a careful physical examination. However, presence of occlusive disease constitutes an indication for contrast-medium visualization of the outflow tracts. Angiographic studies done in recent years have shown that, in many instances, arteriosclerotic occlusive disease of the lower extremities is segmental in nature and associated with relatively normal patent vessels both proximal and distal to the obstruction.

Direct methods now employed in surgical management of occlusive disease of the aorta and peripheral vessels are (1) thrombo-endarterectomy, (2) excision of the diseased segment and graft replacement, and (3) bypass grafting. The choice depends largely on the location and extent of the lesion. Lumbar sympathectomy also has a definitive place in the treatment of arterial

occlusive disease of the lower extremities. It is done in patients in whom a direct arterial procedure is contraindicated by the extensiveness of the disease and in whom sympathetic nerve activity to the lower extremities is demonstrable. Lumbar sympathectomy is also of value when it is done before, or concomitant with, direct arterial procedures of the femoropopliteal vessels, particularly when the status of the outflow tracts is questionable.

Aneurysms. In the absence of other severe complicating systemic diseases, all abdominal aortic aneurysms should be surgically treated. Today, with synthetic grafts, blood banks, and precision surgical instruments, approach to their management is more aggressive.

The diagnosis of abdominal aortic aneurysm is made chiefly on the basis of the clinical examination and history.

Results of surgical excision of abdominal aortic aneurysms are steadily improving. These lesions should be excised as soon as possible after the diagnosis is made. Elective operations are associated with relatively low mortality rates.

Aneurysms of the femoral and popliteal vessels merit the same consideration as do abdominal aortic aneurysms. Without treatment, the course of these lesions is progressive. If there are no other contraindications to operation, the aneurysm should be excised and arterial continuity restored by end-to-end anastomosis or graft.

Peripheral Arterial Emboli. Sudden occlusion of the distal arterial tree by emboli is a surgical emergency. Common etiologic disorders which produce this catastrophe are rheumatic valvular heart disease, mural thrombi of the left side of the heart, and mural thrombi developing over ulcerated atheromatous plaques in the aorta. In the majority of cases, atrial fibrillation is present. Patients sustaining peripheral arterial emboli usually complain of the sudden onset of pain in the affected extremities followed by tingling, numbness, and inability to move that portion of the extremity involved. This history and the associated physical findings of hypothermia, collapsed superficial veins, loss of reflex activity and sensation, and absence or diminution of arterial pulsations establish the diagnosis. Angiographic studies are seldom required. Most peripheral emboli lodge at the sites of arterial bifurcations; another frequent location is in the region of the adductor hiatus. Emboli to the upper extremity also occur and are most common in the brachial and radial vessels.

Treatment of peripheral arterial embolism is primarily surgical and consists of arteriotomy and removal of the embolus. Best results are obtained if surgical removal of the embolus is performed within 6 to 12 hours of the embolic episode. However, the success of operation is predicated not on the elapsed time, but on whether distal propagation of thrombosis has occurred in the arterial tree. When the diagnosis of arterial embolism is made, intravenous heparin should be given and regional sympathetic ganglion

block performed. Except when other systemic contraindications exist, surgical intervention is undertaken as soon as the diagnosis is established.

Thromboangiitis Obliterans. Some authors seriously question the existence of this entity and believe that it may represent only a manifestation of atherosclerosis obliterans in younger persons. Angiographic studies are of value in localizing the obstructing lesions and delineating outflow tracts.

Treatment of Buerger's disease, regardless of its etiology, consists of restoring circulation to the distal arterial tree by the direct surgical measures previously mentioned. In addition, lumbar sympathectomy is recommended to increase collateral circulation and prevent hydrosis which otherwise would be present. These younger patients also are advised to abstain from the use of tobacco.

Raynaud's Disease. This condition is a primary paroxysmal vasospastic condition involving the digital arteries or arterioles. It occurs almost always in response to cold and is bilaterally symmetrical.

The term, Raynaud's syndrome, is used when the vasospasm is secondary to some underlying vascular or other disease. Associated diseases producing Raynaud's syndrome are arteriosclerosis obliterans, scleroderma, rheumatoid arthritis, dermatomyositis, frostbite, burns, mechanical trauma, cervical rib, scalenus anticus syndrome, and lesions of the central nervous system. In 40% of one series of cases of Raynaud's disease, the lower extremities were also involved.

Because 75% of cases of Raynaud's disease run a benign chronic course, medical management is usually employed. When Raynaud's phenomenon is present, treatment of the underlying disease is also necessary. In patients in whom the condition becomes progressive and is associated with pain, ulceration, necrosis, or gangrene, sympathectomy is necessary. Recently, the author has employed the anterior transthoracic transpleural approach suggested by Palumbo when upper thoracic sympathectomy has been required. (Wolfman, E. F. Jr., Flotte, C. T., Surgical Management of Arterial Peripheral Vascular Disease: Postgrad. Med., 27: 40-45, January 1960)

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

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Complications of Biliary Tract Surgery

As the morbidity of complications and mortality rate are decreased after operations, surgical therapy not only becomes safer, but it becomes easier from the patient's viewpoint. Operations upon the biliary tract are among those most frequently performed throughout the United States. Many complications frequently associated with this procedure, can be prevented if they are anticipated. Precision and accuracy in diagnosis and preoperative preparation, meticulous surgical technique, and close observation in the early postoperative period offer opportunities for significant reduction of all complications.

Subhepatic Accumulation. A subhepatic periductal accumulation of material—blood, bile, lymph, and peritoneal fluid—is the most frequent complication following operation upon the biliary tract. If only small amounts of blood, bile, and lymph are present and there is little or no bacterial growth, the peritoneum will absorb and remove them efficiently. If one or all are present in large quantities and evoke an outpouring of plasma rather than absorption of these substances, the amount of accumulation increases.

The drain commonly placed in the subhepatic area may fail to fulfill its intended function or even may evoke an increased foreign body reaction. If the accumulation persists or increases, there is discomfort and pain in the right upper quadrant, elevation of temperature, and leucocytosis—localized peritonitis. It may regress or escape to involve the subdiaphragmatic area or the abdominal cavity. A severe reaction of the tissues near the origin of this accumulation may result in obstruction of the common duct or reflex spasm of the sphincter of Oddi. If the bacterial content of the bile is high and there also is a cholangitis, then systemic manifestations may be marked.

Prevention of subhepatic accumulation is dependent upon careful surgical technique and maintenance of drainage of the subhepatic area for 3 to 4 days or more after operation. When an accumulation is sufficiently extensive to make diagnosis certain, surgical drainage should be seriously considered.

Hemorrhage. Recognition of hemorrhage after operation upon the biliary tract depends upon the same systemic manifestations associated with hemorrhage from any other area. The more common sources include the cystic artery, anomalous branches of the hepatic and right hepatic arteries, gallbladder bed, liver, and vessels of the common duct and abdominal wall. An occasional hemorrhage has been reported from injury to the inferior vena cava.

Hemorrhage sufficient to require blood replacement is an indication for immediate reoperation and search for the source of blood loss because hemorrhage may continue or recur, and any blood accumulation is prone to abscess formation.

This complication may be prevented by careful identification and ligation of all blood vessels before division.

Patients with jaundice frequently have an increased tendency to hemorrhage because of vitamin K deficiency. Parenteral administration of vitamin K to these patients assures control of the tendency to increased bleeding caused by reduced prothrombin as long as liver function remains unimpaired. All patients being considered for operation upon the biliary tract should have careful measurements of prothrombin; if it is lowered, vitamin K should be given. At present, the author recommends that parenteral vitamin K be given to patients with a prothrombin level of 20% below normal.

Bile Peritonitis. Escape of bile into the peritoneal cavity from the common duct, cystic duct remnant, small radicles extending directly from the liver to the gallbladder, and breaks in the continuity of liver substance results in peritonitis. If the rate of escape is slow, omental and peritoneal reaction may effectively localize the accumulation of bile. Free bile in large amounts may cause a fall in blood pressure and clinical manifestations of shock which may terminate in death. At other times, large quantities of bile may cause marked abdominal distention, but little evidence of peritoneal irritation and no changes in blood pressure.

Treatment of bile peritonitis is dependent upon the reaction that results. If surgery is performed, it is essential to remove the bile that has accumulated in the abdomen and to divert its flow to the exterior if it cannot be channeled into the intestinal tract.

Biliary Fistula. If a local accumulation of bile outside its normal course persists or increases, it may form a tract to the exterior of the body. This complication may be burdensome to manage and difficult to correct. However, formation of a tract reduces the seriousness of the original situation by replacing a condition associated with a high mortality rate by one with a much lower mortality rate.

An external biliary fistula that develops after an operation upon the biliary tract is the result of an interruption of the flow of bile along the normal path from the liver to the duodenum. This may occur after any operation upon the biliary tract, caused by the nature or extent of the disease of the biliary tract or distortion or injury resulting from the surgical procedure.

Nutritional depletion rapidly follows complete diversion of the bile from the intestinal tract. As it escapes from a fistula, bile should, therefore, be collected and returned to the patient at regular intervals. An external biliary fistula is an urgent clinical problem and requires surgical correction as early as it can be accomplished with safety to the patient.

In determining the cause of a biliary fistula, it is of importance to know what the findings were at the primary operation and what operative procedure was done. In the absence of jaundice, intravenous cholangiography may give much information. Additional information may be gained from a gastrointestinal series or roentgenographic visualization of the fistulous tract with radiopaque material.

The surgical procedure for correction of a biliary fistula depends upon its cause.

Dislocation, Obstruction, and Retention of Drainage Tubes. Patients who suffer dislocation of the drainage tubes should be observed carefully. If there is no external drainage of bile and there is evidence of diaphragmatic irritation, abdominal distention, or any other sign of the escape of bile into the peritoneal cavity, operation should not be postponed.

Obstruction of the tubes may be corrected by introduction of sterile saline under gentle pressure. Tubes that become clogged by encrusted material should be removed. Use of solvent materials other than water and saline is not recommended.

Various measures may be employed for removal of tubes which become lodged and difficult to remove.

Jaundice. Appearance of jaundice following an operation upon the biliary tract usually is an indication of a serious complication. The nature of its onset, its intensity, severity, or degree of accompanying systemic manifestations provide a basis for suspecting its cause and probable course. The most frequent cause is obstruction along the extrahepatic ductal system. Calculi, infection, neoplasia, and scarring may cause such an obstruction.

The single outstanding cause of jaundice following cholecystectomy, alone or in combination with common duct exploration, is calculi within the ductal system. Careful evaluation of the findings at operation, seeking specific evidence of common duct calculi, should reduce this complication. If calculi are demonstrated within the common duct after an operation upon the biliary tract, they should be removed unless some contraindication exists. If a tube draining the common duct is in place, this should not be removed until the secondary operation is undertaken.

Postoperative cholangiograms should be made before removing any drainage tube from the common bile duct. These examinations require care because of the likelihood of inducing cholangitis.

Various other factors may be responsible for development of jaundice following surgery on the biliary tract. However, neoplasm of the ampulla of Vater or the extrahepatic ductal system should be suspected when cholecystectomy has been preformed for acalculous cholecystitis. If this is the case, the Whipple procedure is required.

Pancreatitis. Pancreatitis, fortunately, is not a common complication following cholecystectomy, occurring more frequently following exploration of the common duct. Regurgitation of bile is believed to be the most frequent cause. The inflammation tends to subside within a few days, and no surgical intervention is indicated.

Injury to the Common Duct. Stricture of the bile duct following injury to it is one of the most serious complications associated with operation upon the biliary tract. Perhaps less than half of those who sustain a stricture due to operative injury survive for 10 years.

Development of jaundice or formation of a biliary fistula may be the manifestation of injury to the bile duct. Repair and correction of this condition is complicated and depends upon the specific type and extent of injury.

Other Causes of Jaundice. These include jaundice that results from a hemolytic reaction following transfusion, viral hepatitis, accentuation of preexisting cholangitis, and development of cholangeolitic hepatitis. In addition, carcinoma—primary or metastatic—may have been present, producing the symptoms that indicated surgical disease of the biliary tract. (Glenn, F., Complications of Biliary Tract Surgery: Surg. Gynec. & Obst., 110: 141-156, February 1960)

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Diagnostic Pneumopericardium

Simple roentgenographic evaluation of mediastinal and contiguous cardiac and pulmonary structures frequently is extremely difficult and, in many instances, may be impossible. Preoperative differential diagnosis of paracardiac lesions, even with barium in the esophagus and after angiocardiographic techniques, has presented a problem in the past.

During the past 3 years, the authors have investigated the physiologic effects of introduction of air into the intact pericardial sac in the experimental laboratory. On the basis of information obtained from these experiments, a simple safe technique for introduction of air into the pericardial space for diagnostic purposes has been evolved and applied in a series of patients.

Historically, little interest has been focused upon pneumopericardium in the past. This paucity of information probably results from the generally prevalent impression among physicians that air in the pericardiac space is a highly dangerous, if not fatal, occurrence because of possible tamponade and heart standstill.

Anatomically, the pericardium is a fibro-serous sac in which the heart and roots of the great vessels are contained. The enclosed sac or the pericardial cavity is merely a potential space, the potential volume of which is much larger than that occupied by the normal heart in diastole. Circumstances have been encountered, however, in which the pericardium does definitely influence heart size and cardiovascular dynamics. The degree to which this influence can be exerted would depend upon the distensibility of the pericardium per se. This, in turn, according to some investigators is directly related to the structural composition of the pericardium—the interwoven pattern of elastic fibers and the less distensible collagen fibers.

Details of the technique—which requires simple equipment—are presented along with several case histories illustrating the specific aid provided by this diagnostic procedure. Pneumopericardium has been overlooked as a diagnostic "tool" that can give valuable preoperative information regarding

the precise origin of paracardiac, cardiac, pericardial, and contiguous diaphragmatic lesions. The preoperative information obtained permits a direct, accurate, and less time-consuming surgical approach to lesions in and about the heart, pericardium, and mediastinum. (Maurer, E. R., Mendez, F. L. Jr., Diagnostic Pneumopericardium - Its Clinical Application, Dis. Chest, XXXVII: 13-22, January 1960)

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Robuden and Peptic Ulcer

In search for a more effective treatment for peptic ulcer and prevention of its recurrence, attention of the authors was drawn to Robuden. This is a protein-free extract derived from animal stomach and duodenum which has received much attention in Europe during the last 12 years as a useful adjunct in peptic ulcer therapy.

Of publications dealing with investigation of Robuden, almost forty are concerned with its effects upon the clinical course of peptic ulcer—doubts as to its value were expressed by three authors and the remaining thirty-seven reported it to be at least as effective as treatment with antacids or anticholinergic drugs. Speed of relief from pain, and extension of remission periods when Robuden was intermittently administered were stressed by most authors.

Following clinical investigation of the physiologic effects of Robuden and application of the substance in clinical trials, the authors conclude that many patients with peptic ulcer in the acute period of the disease have benefited from Robuden. Started during or after relapse and continued intermittently during the interval period, Robuden has been of even greater advantage either by prolonging the free interval between recurrences or by rendering relapses less frequent and less severe.

Except for constipation occurring in certain patients, Robuden treatment does not cause untoward side effects similar to those observed when anticholinergic drugs or large doses of antacids (milk-alkali syndrome) are given for long periods of time. It is easily applicable to the routine management of ulcer in remission, and may be supplemented by occasional administration of antacids or anticholinergics if needed.

In the authors' observations, the effect of Robuden upon secretion of hydrochloric acid and pepsin was inconsistent. If present, it was insufficient to explain the results obtained.

The in vitro effect of Robuden upon absorption of pepsin may have only limited effect upon the concentration of pepsin in the stomach and be of significance only for the nonstimulated basal secretion.

Enhancement of formation of the mucoproteose fraction in the stomach has been suggested as one of the mechanisms of Robuden action. Current

observations only partially support the role of mucoproteose in peptic ulcer disease and the mechanism of effects of Robuden.

Decrease of gastrointestinal motility has been demonstrated after administration of Robuden to patients with peptic ulcer and in animal subjects. The decrease of motility caused by Robuden apparently is not due to enterogastrone content, because Robuden has been shown by comparative pharmacologic studies to be without enterogastrone activity.

Substitution effect may be a factor of therapeutic effectiveness of Robuden by supplying one or more of the protective substances present in the normal stomach and duodenum which are absent from the stomach of patients with peptic ulcer. These substances may include not only products of the surface epithelium, such as mucoproteose and soluble surface epithelial mucus, but also the inhibitors of gastric secretion and gastric motility. Substitution of these materials would provide better conditions for healing of the ulcer crater and, by decreasing the effects of acid-pepsin digestion upon the gastric mucosa, prevent relapses. (Glass, G. B. J., Schwartz, S. A., Studies on Robuden, Extract from Stomach and Duodenum: Am. J. Digest Dis., 4: 988-1013, December 1959)

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Chlorothiazide in Treatment of Hypertension

Studies have demonstrated the potentiation of antihypertensive agents by chlorothiazide, but its value alone in patients with moderately severe and severe hypertension has not been established. The authors compared the effectiveness of alternate 6-month courses of chlorothiazide alone with standard antihypertensive therapy, and compared the results of these periods with those of a 6-month combined treatment period when patients received both chlorothiazide and standard antihypertensive therapy.

Addition of chlorothiazide to ganglionic-blocking agents plus reserpine produced excellent results in all patients with severe hypertension—even those with fulminating vascular disease. In the absence of uremia, such combination therapy should be instituted promptly when the accelerated phase of hypertension is present. Time need not be wasted in administering either drug separately.

Potentiation of mecamylamine by chlorothiazide made it necessary to reduce the dosage to avoid severe postural hypotension. Although the reduced dose of mecamylamine avoided postural hypotension, undesirable side effects, such as blurred vision, fatigue, and impotency still remained. It was noteworthy that when the accelerated phase of hypertension had been halted, hydralizine or veratrum could be successfully substituted for mecamylamine. Whatever the reason for the continued good response in the patients observed, long-term ganglionic-blocking therapy was seldom

indicated. Reserving ganglionic-blocking therapy for the short-term treatment of the accelerated phase of hypertension will not only free the patient from uncomfortable side effects, but will also insure sensitivity to ganglionic-blocking agents that may be life-saving at a later date.

Although chlorothiazide alone has no place in treatment of severe hypertension, it may be as effective in moderately severe hypertension as veratrum plus reserpine, or hydralazine plus reserpine. Its ease of administration seems to make it the drug of choice in this regard. However, because it was observed by the authors to be only 50% effective when used alone as compared to 100% effectiveness whan combined with hydralizine or veratrum, they consider that there is no indication to administer these agents separately. Potentiation of antihypertensive properties of veratrum and hydralazine by chlorothiazide enables lower doses of these agents, thus, practically doing away with side effects.

Past experience with hydralazine and, particularly, with veratrum attests to the frequent development of drug resistance when these agents are used for long periods of time. Therefore, once a hypotensive effect has been attained with veratrum or hydralazine in patients with moderately severe hypertension, these agents may be withdrawn and antihypertensive therapy continued with reserpine plus chlorothiazide.

From the authors' observations it is suggested that the choice of the antihypertensive agent should change with the severity of the hypertensive state. Whereas, ganglionic-blocking agents plus chlorothiazide are needed initially to control the accelerated phase of hypertension, once this phase has been controlled, less potent therapy may be substituted. It seems useful to divide antihypertensive therapy into two phases, initial and maintenance. Initial therapy in the accelerated phase should include ganglionic-blocking agents, chlorothiazide, and reserpine. Following control of this phase (clearing of papilledema and retinal hemorrhages), veratrum or hydralazine may be substituted for the ganglionic-blocking agents. In patients with moderately severe hypertension, initial therapy consists of veratrum or hydralazine plus chlorothiazide plus reserpine. Long-term maintenance therapy, which may be instituted when arterial pressure has been stabilized for 2 or 3 months, consists of chlorothiazide plus reserpine. (Finnerty, F.A. Jr., et al., Evaluation of Chlorothiazide Alone in the Treatment of Moderately Severe and Severe Hypertension: Circulation, XX: 1037-1042, December 1959)

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Use of funds for printing this publication has been approved by the Director of the Bureau of the Budget (19 June 1958).

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Metabolic Insufficiency

"Metabolic insufficiency," also known as "nonmyxedematous hypometabolism," or "euthyroid hypometabolism," has been characterized as a clinical syndrome associated with a low basal metabolic rate and many symptoms similar to those of hypothyroidism. In this syndrome, unlike hypothyroidism, the serum concentration of protein-bound iodine (PBI) and the thyroidal uptake of radioactive iodine are within the normal range, and treatment with desiccated thyroid or thyroxine does not increase the basal metabolic rate significantly or relieve the symptoms.

Observing that patients with hypometabolism treated with triiodothyronine by himself and some of his colleagues did not improve or show sustained improvement as reported by other observers, the author conducted a double blind study using thyroxine, triiodothyronine, and a placebo.

Vigorous advertising and several papers reporting large numbers of patients with the symptoms of metabolic insufficiency have implied that this is a common condition. However, the author found only 22 such patients during a one-year period in a university clinic in which 10,141 new patients were seen. Of these, 2,290 were new medical patients. Thus, the 22 patients who fulfilled all necessary criteria for a diagnosis of "metabolic insufficiency" represented approximately a 1% incidence.

It has been suggested that in these patients there is a defect in the penetration or activation of thyroxine in the cells which is circumvented by triiodothyronine. However, to date, there has been no biochemical evidence that thyroxine degradation is abnormal. Although the fractional thyroxine turnover rate is slower in many of these hypometabolic patients, the amount of thyroxine degraded per day is normal.

Certain data compiled in this study indicate that there is no end-organ or cellular deficiency of active thyroid hormone in these patients. If there were, the clinical picture should resemble myxedema more closely.

The abnormal personality patterns shown by the author's patients raise the question of the relationship between the BMR, the clinical picture, and the psychologic state. One possibility is that the low metabolic rate accounts for the abnormal personaltiy. However, even after an increase in the BMR and improvement in the clinical state, the personality profile remained unchanged, suggesting that the low metabolic rate is probably the effect, and not the cause, of the abnormal psychologic state. The exact relationship between the emotional state and the BMR is worthy of further investigation.

No support or specific indication for the use of triiodothyronine in this syndrome was demonstrated in this study. Further, the greater degree of improvement occasionally obtained with a lactose placebo as compared to the biologically active compounds—thyroxine and triiodothyronine—in the same patient is additional confirmation of the lack of a significant difference between the effects of these preparations in this particular syndrome.

It is concluded that the term, "metabolic insufficiency," is vague and misleading and might well be dropped. In patients with the syndrome indicated by this diagnosis, there is probably no discrete biochemical lesion, but instead, an underlying psychologic disorder not directly involving the thyroid. (Levin, M. E., Metabolic Insufficiency: J. Clin. Endocrinol., 20: 106-115, January 1960)

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Value of Van Den Bergh Reaction

The relationships of direct reacting, indirect reacting, and total serum bilirubin have been used since the test was devised by van den Bergh and Muller as a diagnostic aid in differentiating "medical" from "surgical" jaundice. With the development of newer concepts of bilirubin metabolism, critical reevaluation of the serum van den Bergh reaction as a diagnostic aid seems necessary.

Some investigators have suggested that within specific ranges the ratio of direct and total serum bilirubin may be valuable in differentiating jaundice. Specifically, Watson has suggested that "the one-minute bilirubin, (direct) is often elevated significantly within the normal range of total bilirubin in diseases of the liver or biliary tract." However, others have not felt that the direct and indirect van den Bergh reactions were of diagnostic significance except when suspecting hemolytic anemia.

Although it has been proven that bilirubin in human plasma is bound to plasma albumin, the van den Bergh reaction does not depend on splitting the protein linkage by alcohol. It has been found that the direct and indirect fractions contain distinct substances which can be identified as free bilirubin, bilirubin monoglucuronide, and bilirubin diglucuronide. Accordingly, it has been suggested that the names, "direct" and "indirect reacting" bilirubin be replaced by "bilirubin" and "conjugated bilirubin."

Transferase enzymes in the microsomes of liver cells catalyze the transfer of the glucuronide radical from uridine diphosphate glucuronic acid to various receptors, including bilirubin. There is a definite difference in solubility in water between bilirubin and its ester-glucuronides which may be the basis for the "indirect" and "direct" reactions. The more readily soluble glucuronides are normally excreted in bile.

From a statistical study of 101 patients with elevated serum bilirubin, the authors concluded that determination of the direct serum bilirubin in conjunction with the total serum bilirubin does not materially aid in differentiating jaundice which is due to extrahepatic obstruction from that due to diffuse hepatocellular disease. Fractionation of serum bilirubin appears to be of value in differentiating hemolytic anemia from these other conditions. Patients with obstruction of the common bile duct have serum bilirubin elevation more

marked than values noted in other liver disease; obstruction due to carcinoma generally causes more marked elevation than that due to common duct stone.

In the authors' opinion, routine use of the quantitative fractionation of serum bilirubin does not appear to be justified. (Chapman, J. A., et al., An Analysis of the Clinical Application of the van den Bergh Reaction in Jaundice: Am. J. Med. Sci., 239: 11-16, January 1960)

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Consultant to Surgeon General Dies

Rear Admiral Winchell M. Craig MC USNR (Ret), consultant to the Surgeon General of the Navy and special assistant for health and medical affairs to the Secretary of Health, Education, and Welfare since November 1959, died 12 February 1960, at the Mayo Clinic, Rochester, Minnesota at the age of sixty-eight.

Throughout his long association with the Medical Department of the Navy, Admiral Craig earned the highest respect of his colleagues and the esteem and affection of all who were privileged to work with him. His contributions to the Medical Department of the Navy were innumerable and continue to be reflected in the effectiveness of medical care in the Navy.

He began his naval career as a Lieutenant in the U. S. Naval Reserve on 26 July 1927. Because of his meritorious performance he became the first Reserve Medical officer selected as Medical Director with the rank of Rear Admiral—an honor conferred on 20 July 1943.

Dr. Craig reported for active duty on 30 December 1941. At that time, he was considered to be the leading neurosurgeon in the United States and held the position of Professor of Neurosurgery at the Mayo Foundation, and at the University of Minnesota Medical College. During his initial duty at the U. S. Naval Hospital, Corona, California, he established the first neurosurgical center for Navy and Marine Corps wounded. Following completion of this duty he was assigned to the U. S. Naval Hospital, National Naval Medical Center, Bethesda, Maryland on 1 July 1942 as Chief of the Neurosurgical Division and later as Chief of Surgery.

In his capacity as neurosurgical consultant to the Surgeon General, Admiral Craig made many inspection trips to both Atlantic and Pacific battle fronts where his knowledge and experience in this field were of benefit to both Army and Navy commands. He recommended establishment of neurosurgical units in forward areas which resulted in the saving of hundreds of lives and reduced the degree of incapacity of the wounded. He was in large part responsible for procurement of neurosurgeons for the Navy and for the training of general surgeons in this specialty, during the critical years of World War II. As a result of these efforts, competent neurosurgical teams were provided for various hospitals, fleets, hospital ships, and the Fleet Marine Force. For his accomplishments, he was awarded the Legion of Merit.

At the close of World War II, when scheduled for release from active duty, Admiral Craig requested retention for the purpose of completing the plans for the expanded residency training program for naval Medical officers. The program which he devised remains one of the most effective methods for procuring and training naval Medical officers, such as those who are providing the present high quality of medical care.

Following his release to inactive duty in 1946, Admiral Craig served for several years as Head of the Section of Neurological Surgery at the Mayo Clinic, and as Professor of Neurosurgery, Mayo Foundation, University of Minnesota. He continued to serve as consultant to the Surgeon General, and served for many years on the Executive Council of the Association of Military Surgeons, holding the office of President during 1952 and 1953. He was placed on the retired list of the Naval Reserve in 1952.

Born in Washington Court House, Ohio, Admiral Craig attended Ohio Wesleyan University and Johns Hopkins Medical School, receiving the degree of Doctor of Medicine from the latter in 1919. He is survived by his wife, three sons—one of whom is a Captain in the Marine Corps—and one daughter. Interment was in Arlington National Cemetery.

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IN MEMORIAM

Fischer, Irwin Michael LT MSC USN (Ret)	
U. S. Naval Hospital, St. Albans, N. Y.	17 December
Farnsworth, Dean CDR MSC USN (Ret) (Active)	
U. S. Naval Hospital, Bethesda, Md.	27 December
Kalas, Frank Joseph CAPT DC USN	
U. S. Naval Hospital, Camp Pendleton, Calif.	31 December
Pettey, Marie Brizzolara ENS NC USN (Ret)	
U. S. Naval Hospital, San Diego, Calif.	2 January
Booker, Charles Walt LT HC USN (Ret)	
Cordele, Ga.	8 January
Ross, John Leroy LT HC USN (Ret)	
U. S. Naval Hospital, Oakland, Calif.	9 January
Viele, Jack Spiecher LT MC USN	
Pensacola, Fla.	6 February
Craig, Winchell McKendree RADM MC USNR (Ret)	
St. Mary's Hospital, Rochester, Minn.	12 February
Lindauer, Oscar William WOHC USN (Ret)	
U. S. Naval Hospital, Annapolis Md.	13 February

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From the Note Book

25th Anniversary for USNH, Philadelphia. The U. S. Naval Hospital, Philadelphia, Pa., will mark its 25th anniversary on 12 April 1960. The first of the Navy's "skyscraper" hospitals, it was commissioned in 1935. The anniversary celebration will include a reunion of the hospital's "plank owners" and former shipmates. All Navy men who ever served at the hospital are asked to get in touch with the hospital's commanding officer for the planned reunion.

"Nuclear Nursing" Exhibit. The Surgeon General has announced that the Bureau of Medicine and Surgery's "Nuclear Nursing" exhibit—an exhibit which presents the Navy's newest educational program for qualifying nurses in the principles of mass casualty management—will be presented at the California State Nurses Association meeting in Los Angeles 6 - 10 March 1960. It will be monitored by a member of the staff of the U. S. Navy Recruiting Station, Los Angeles, and headed by LCDR Lenore Simon NC USN of the Department of Nuclear Medicine, Naval Medical School, NNMC, Bethesda, Md.

Ecology of Ships of Inner Space. CAPT Harry Alvis MC USN, in relation to modern ships of inner space, discusses environmental factors of the nuclear reactor as a source of energy, problems of atmospheric control, and the psychologic atmosphere. (Ann. Int. Med., December 1959)

Lesion of Cardia Simulating Carcinoma. The cardiac end of the stomach, a difficult area to demonstrate roentgenologically, may present many lesions simulating neoplasm. They may be divided into three groups: (1) normal variants of gastric anatomy; (2) intrinsic gastric lesions of nonmalignant nature; and (3) pressure deformities from external sources. Illustrations are presented. (G. Wohl, L. Shore, Am. J. Roentgenol., December 1959)

Gastric Ulcer. The current attitude of Kirsner, Clayman, and Palmer is presented in a review of the problem of gastric ulcer in Archives of Internal Medicine, December 1959. They believe that accurate differential diagnosis of benign and malignant gastric ulcer is possible in 96 to 98% of cases; and, that there is no conclusive evidence to date that shows that routine resection of gastric ulcers will improve survival of gastric cancer patients significantly.

Congestive Heart Failure—a symposium consisting of 10 articles by selected authorities is presented in Circulation for January, February and March.

Duodenal Diverticulitis with Perforation. The authors add one case report to English literature which contains only 10 previously reported cases. True incidence of duodenal diverticula remains unknown, varying from 0.8% to 22%. Clinical review of the problem is presented. (LCDR W. Adams Jr. MC USN, LT B. Cole MC USN, J.A.M.A., 9 January 1960.)

Lethal Factors in Intestinal Obstruction. Curious as to the critical pathophysiologic factor responsible for the extremely serious prognosis of intestinal obstruction, the author conducted animal experiments. Mechanical occlusion with fluid loss and tissue dehydration, electrolyte disturbances, loss of circulating blood volume, peritonitis, pressure effects on contiguous organs—apparently none of these was the critical factor. The author's studies indicated that bacterial cells or their endotoxins, contained in the occluded segment, played the important role in the lethal outcome of strangulated intestinal obstruction. (W. Barnett, Surg. Gynec. & Obst., December 1959)

Colonic Diverticulosis. Out of 1,016 barium enema studies, 222 patients with an average age of 70.4 years were found to have colonic diverticulosis. No obvious association with malignancy of the colon was observed. In the experience of the authors, once diverticuli were formed, the disease did not appear to be progressive. The implication is that the lesion is based on a preexisting structural abnormality rather than on an acquired degenerative change. (C. Smith, W. Christensen, Am. J. Roentgenol., December 1959)

Adrenalectomy in Ascites. Among patients in whom cirrhosis of the liver is accompanied by ascites, there is a small group in whom the ascites cannot be abolished by usual methods. When it has proved intractable by established criteria, the authors recommend bilateral adrenalectomy provided the liver can reasonably be expected to regain some degree of functional competence. (I. Baronofsky, CAPT R. Faucett MC USN, CAPT H. Weiss MC USN, J.A.M.A., 16 January 1960)

Prednisone in Ascites. Prednisone has been shown to initiate diuresis and natruresis and to potentiate the action of diuretic agents in patients with chronic hepatic disease and ascites. The diuretic action appears to be independent of improvement in liver function and related primarily to alterations in renal function induced by the adrenal steroids. (J. Carbone, H. Matthews, Gastroenterology, January 1960)

X-Ray Signs of Chronic Bronchitis. Reporting from U.S.N.H., San Diego, the authors present a case demonstrating specific bronchographic findings in chronic bronchitis. They state that the diagnosis of chronic bronchitis can be made with roentgenographic and bronchographic evidence of:

(1) bronchial gland dilatation; (2) bronchiolectasis; (3) distortion of bronchial walls; and (4) coincident emphysema and fibrosis. The first two manifestations are pathognomonic. (LT V. Oliva MC USN, et al., Am. J. Roentgenol., January 1960)

Pulmonary Complications of Rheumatoid Arthritis. Pleural effusion occurs not infrequently in the course of rheumatoid arthritis, predominantly in man. It may be associated with parenchymatous pulmonary disease, but more commonly occurs as an isolated finding, and then is often an inaugural event in the disease. (A. Horler, M. Thompson, Ann. Int. Med., December 1959)

Chloroquine in Rheumatoid Arthritis. Chloroquine was used as the main medical agent in comprehensive management of 50 cases of chronic rheumatoid arthritis. Major improvement or complete remission was observed in 88% while only 8% showed no improvement or regression. For full benefit, treatment must be continued for longer than 18 months. (J. Young, Ann. Int. Med., December 1959)

Streptococcus and Rheumatic Fever. A phase of the evolution of modern medicine is interestingly presented by Alvin Coburn who describes the steps in the recognition of the role of hemolytic streptococcus in rheumatic fever. The development of this concept well illustrates the application of clinical art in medical science. (A. M. A. Arch. Int. Med., December 1959)

Antihypertensive Effect of Chlorothiazide. The authors' investigations indicate that, following treatment with chlorothiazide, initial lowering of blood pressure is accompanied by reductions in plasma and extracellular fluid volumes and in body weight. However, since gradual reaccumulation occurs during continuing treatment, the late antihypertensive effects cannot be explained by the volume depletion mechanism. (I. Wilson, E. Freis, Circulation, December 1959)

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BUMED INSTRUCTION 6820.10 18 February 1960

Subj: Handbook of the Hospital Corps, U.S. Navy (1960), NavMed P-5004

This instruction establishes policies and procurement procedures for the 1960 revision of the Handbook of the Hospital Corps. The revised Handbook will be published in loose-leaf form, and chapters will be printed and available for distribution as editing is completed, not necessarily in numerical sequence. Page changes will be issued from time to time to reflect current changes in policy or knowledge.

DENTAL SECTION

Caries Reduction in Milwaukee

"Very substantial benefits" have resulted from the first 6 years of fluoridation of Milwaukee's water supply. This statement is made by Dr. E. R. Krumbiegel, Commissioner of Health for Milwaukee, in a report just issued on the results of a dental survey of 4,660 school children in that city. Dr. Krumbiegel predicts that annual increment of financial and other benefits will be significant with each additional year of fluoridation. Among high points of the report are:

1. There has been a 59% reduction in caries experience for seven-year old children. The DMF index for this age group was 1.29 before fluoridation and 0.53 after 6 years and 3 months of the procedure. For purposes of survey tabulation results, a seven-year old child is one who is more than six and one-half and less than seven and one-half. Members of this age group accordingly have received almost maximum dental benefit from fluoridation in Milwaukee.

2. The cost of fluoridation in Milwaukee has averaged 5.5 cents per person per year. Based on the local prevailing cost of treatment, the report estimates that the saving in cost of dental care for children six through thirteen has been about $718,000.

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Military Law and Naval Discipline

Military law may be defined as that body of rules prescribed by competent authority for the government and regulation of the Armed Forces.

Military jurisdiction may be defined as that sphere of authority in which the military exercises control over the military establishment. Constitutional provisions for military jurisdiction are found in the powers granted to the Congress, in the authority vested in the President, and in the Fifth Amendment to the Constitution.

Because a Dental officer may be called upon to fill various roles in the conduct of naval courts-martial, as trial or defense counsel on special

courts-martial, he should have a working knowledge of the essentials of military law. Since all naval discipline is administered in accordance with the Uniform Code of Military Justice, he should be familiar with its fundamental provisions. Public Law 506, 81st Congress, unified, consolidated, and revised the Articles of War, the Articles for the Government of the Navy, and the disciplinary laws of the Coast Guard and replaced them with the Uniform Code of Military Justice. Executive Order No. 10214, dated 8 February 1951, specified 31 May 1959 as the effective date for the new code.

Naval law has two general sources, written and unwritten laws. Written sources include the Constitution of the United States; international law, including the law of war; acts of Congress, specifically those concerning pay, promotion, retirement, and other matters affecting naval personnel; Navy Regulations and Navy General Orders; Notices and Instructions from competent naval authority.

The unwritten sources of naval law include decisions of the courts, the President, the Secretary of Defense, and the Secretary of the Navy; opinions of the Attorney General of the United States and of the Judge Advocate General of the Navy; courts-martial reports and orders; and customs, traditions, and usages of the service.

In addition to the Code, the following publications delineate naval authority: Manual for Courts-Martial, United States, 1951; 1955 Naval Supplement to the Manual for Courts-Martial, United States, 1951; Navy Regulations, 1948; Bureau of Naval Personnel Manual; and organization and standing directives. Authority is also delegated throughout the rank and rating structure of the Navy by means of orders and commands. Since naval policies change from time to time, other vital information for operating and maintaining the U.S. Navy is disseminated by means of official publications.

Being in the Navy does not free a man from his obligation to observe civil laws. Accordingly, he is subject to civil authorities and to civil courts when within their jurisdiction, except for acts performed in connection with military duty. Commanding officers ashore and afloat are authorized to permit the service of subpoena or other legal process upon an officer or enlisted man; however, the commanding officer's permission must be obtained in order to protect the national interest.

Any disciplinary system would prove ineffective if it were not reinforced by penalties for infraction and by machinery for trying and judging offenders. Naval courts-martial and captain's mast provide this machinery. The composition of courts-martial is such that they can be summoned on comparatively short notice. Depending on the severity of the punishment that may be awarded, offenders are tried at captain's mast, a means through which commanding officers may impose nonjudicial punishment; and by the judicial systems of summary court-martial, special court-martial, or general court-martial. These two systems empower responsible authority to punish offenses

ranging from minor infractions which are dealt with at captain's mast to the most serious violations of naval law considered by a general court-martial. The punishments that may be inflicted range from a simple sentence of extra duties up to, and including, loss of life. Because man in the Navy do not differ from men in other walks of life, the Navy's court-martial system must be as broad in scope as any civil judicial system.

The Dental officer must realize that military justice seeks to protect dental personnel, to guard their rights, and to insure their well-being. The Uniform Code of Military Justice is just and impartial and is based more upon common sense than upon fine legal points. It is not designed to punish a person harshly for petty acts nor to serve as an arbitrary code under which to crush his freedom and self-respect; the deed, not the man, is condemned. The code acts for the members of the Armed Forces—not against them.

Punishment of dental personnel is the responsibility and duty of the commanding officer alone; it is both improper and illegal for a Dental officer to punish his men by assigning extra duties or by depriving them of their liberties. Naval personnel are generally aware of regulations and any illegal punishment will be greatly resented. The resultant damage to morale will over-shadow any possible good effect. Even offenses serious enough to warrant courts-martial must first go to mast.

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Short Course in Casualty Care

A short postgraduate course in Casualty Care, part of the Navy Dental Corps' continuous training program, will be presented at the Naval Dental School, National Naval Medical Center, Bethesda, Md., 11 through 15 April 1960.

This course is designed to train Dental officers in mass casualty care. Lectures, demonstrations, and practical field exercises vitalize the course. A lifelike manikin which will "bleed" and permit simulation of various wounds and problems associated with a major disaster will be utilized. Other training aids facilitate effective instruction in intravenous injections, control of hemorrhage, shock, and emergency cricothyroidotomy.

CAPT H. J. Towle, Jr., DC USN will be instructor for the course. Quotas have been assigned to the following: First, Third, Fourth, and Sixth Naval Districts; Potomac River Naval Command; Severn River Naval Command; and, Naval Air Training Command.

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Orientation of Dental Ensigns

A course of instruction in officer orientation similar to that received by commissioned officers of other corps of the Navy will be given to those dental students participating in the Ensign 1925 program.

The curriculum of this course will include pertinent dental department and clinic administrative procedures, but emphasis will be placed on a general naval indoctrination.

This training will take place after the student completes his sophomore or junior year of dental school. The classes which will be of four weeks' duration will convene every two weeks, 27 June 1960 through 22 August 1960, at the Naval Schools Command, U. S. Naval Station, Newport, R. I.

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Veterans' Dental Treatment

BuMed Instruction 6620. 2 of 20 March 1953 sets forth a policy that Dental officers of the Navy shall not advise personnel being separated from the Navy or Marine Corps regarding eligibility for dental treatment from the Veterans Administration. The Bureau of Medicine and Surgery, however, continues to receive allegations from discharged personnel which indicate that the aforementioned policy is not being followed in all instances.

Very few veterans who are currently being discharged are eligible for dental treatment at VA expense. Specifically, a veteran who entered the service after 31 January 1955 is a peacetime veteran and may be considered eligible for treatment of service-connected dental defects at VA expense only if discharged because of a service incurred disease or injury and is in receipt of disability compensation from the Veterans Administration.

Separatees who have been given erroneous information at the time of their discharge regarding eligibility for dental treatment are disappointed and sometimes irate when advised by the Veterans Administration that they are not eligible for this care. Since many veterans have given vent to these emotions by sending letters to Congress, Secretary of Defense, Secretary of the Navy, American Legion, et cetera, the significance and importance of BuMed Instruction 6620. 2 cannot be over-emphasized.

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Personnel and Organization Notes

Admiral Schantz Attends Congress on Dental Education. RADM C. W. Schantz DC USN, Assistant Chief of the Bureau of Medicine and Surgery, (Dentistry) and Chief, Dental Division, attended the 16th Congress on Dental Education

and Licensure sponsored by the Council on Dental Education which was held 6 February 1960 at the Conrad Hilton Hotel, Chicago. The theme of the congress was the role of dental schools, licensure boards, and dental societies in developing and maintaining high professional and ethical standards for dental practice. While in Chicago, RADM Schantz attended the Chicago Dental Society's Midwinter meeting.

Chilean Navy Dental Officer Receives Certificate. CDR Rogelio C. Barroso, Chilean Navy, was recently awarded a certificate of completion of an Observership in Oral Surgery by CAPT E. G. F. Pollard DC USN, Commanding Officer, U. S. Naval Dental School, NNMC. During CDR Barroso's observership at the Dental School, he became particularly interested in tissue transplantation and tissue banking—two processes new to him. Before coming to the Dental School, he completed a 10-week observership course at the U. S. Naval Medical School, auditing several lectures and clinical demonstrations at the Dental School during that time.

A graduate in dentistry from the University of Chile and a former aide at that university in the fields of oral surgery and odontology, CDR Barroso came to the United States as a participant in the U. S. Navy Foreign Military Training Program under the Mutual Security Act of 1954. Foreign military assistance training is carried out through, and under the provisions of, bilateral agreements between the United States and individual countries.

CAPT Wais Presents Papers. CAPT F. T. Wais DC USN, U. S. Naval Air Station, Pensacola, Fla., presented a paper before the American Association of Endodontists, Chicago, entitled "Conservation Treatment of Suspected Cystic Areas Following Successful Obturation of Root Canals of Non-Vital Teeth." At the Chicago Midwinter Dental Meeting, CAPT Wais presented a paper entitled "Practical Surgical Techniques Employed in Endodontics."

Naval Hospital Dental Service. Notification was received on 15 January 1960 that the Dental Service of the U. S. Naval Hospital, Beaufort, S. C., has been approved by the Council on Hospital Dental Service, American Dental Assn. CDR H. B. Marble DC USN is Chief of this Dental Service.

Mare Island Shipyard Dental Department. The Dental Department, Mare Island Naval Shipyard, recently was host to the members of the Bay Area Armed Forces Prosthetic Study Group during the monthly meeting at the Commissioned Officers' Mess. The speakers were CAPT Samuel Goldhaber DC USN and CAPT Gordon L. Miller DC USN, both attached to the local Dental Department. CAPT Goldhaber presented a lecture, "Periodontal Considerations in Prosthetic Treatment," and CAPT Miller, Diplomate of the American Board of Prosthodontics, presented an article, "Complete Dentures - Delivery and Maintenance."

RESERVE SECTION

Selected Reserve Programs of the Naval Reserve (Other than Air)

"Selected Reserve Programs of the Naval Reserve (Other than Air)" is the subject of BuPers Instruction 5400.42 dated 22 January 1960. This important directive contains 17 enclosures relating to all programs of the Selected Reserve and prescribes the mission, organization, membership eligibility and scope of the training, and guidance for continued operation of the Selected Reserve Programs, other than Naval Air Reserve, in one consolidated directive.

Enclosure (3), Hospital Corps Program, is published herewith for the information and guidance of interested individuals.

1. Specific Mission. To provide trained medical and dental enlisted personnel available for immediate active duty to increase the manning level of afloat units of the active fleet to full war complement.

2. Sponsoring Activity. Chief, Bureau of Medicine and Surgery.

3. Authorized Units. The Hospital Corps Program consists of Hospital Corps Divisions with the primary function of providing rate training for medical and dental personnel, within the prescribed training allowance, in order to improve their qualifications and readiness for assignment to active duty in fleet billets.

4. Organization. The Naval Reserve Hospital Corps Program is organized in accordance with BuPers Instruction 5400.1 (Series) (Subj: Tables of Organization for the Naval Reserve), and within the allowances authorized herein.

5. Administration.

a. Hospital Corps Divisions shall be administered in accordance with provisions contained herein.

b. The District Medical Officer shall direct and supervise the assigned Hospital Corps Divisions. He shall coordinate with the Assistant Chief of Staff for Naval Reserve and Training for any special assistance he may require in regard to training, administration, and evaluation of training progress.

c. Units of the program are assigned to Naval Reserve Training Centers for administration and support. The units may be located at Training Centers or at Naval Hospitals for training.

6. Allowances. Standard paygrade and rank/rating allowances are as prescribed in Appendix A.

7. Eligibility. Personnel shall be assigned to units in accordance with the provisions of BuPers Instruction 1300.3C (Subj: Assignment and Termination policies and procedures for pay units of the Naval Reserve), Appendix A hereto, and the following:

a. Attachment of officer and enlisted personnel in drill pay status is restricted to those who are qualified for assignment to a fleet mobilization billet.

b. Women personnel are not eligible for attachment to drill pay billets within the authorized allowance. Women enlisted personnel may be assigned to associate pay billets.

8. Training.

a. The primary objective of training in the Hospital Corps Program is to improve the qualifications and readiness of attached personnel for active duty in fleet mobilization billets.

b. Active Duty for Training. The following guidelines are prescribed with a view towards achievement of a well balanced training program:

(1) Hospital Recruits and Hospital Apprentices will perform their active duty for training as set forth in BuPers Instruction 1510.88A.

(2) Hospitalmen will perform their active duty for training at a Naval Hospital. Emphasis should be placed on completion of practical factors as required for qualifying for advancement in rating.

(3) Hospital Corpsmen in pay grades E-4 through E-7 will be assigned as follows:

(a) First ACDUTRA should be at a Naval Hospital.

(b) Second ACDUTRA should be afloat in any operating ship affording suitable sick bay facilities for adequate training.

(c) Third ACDUTRA should be at the nearest Amphibious Training Command to receive training in the medical aspects of an amphibious operation.

(4) Medical Department officers attached to Hospital Corps Divisions will perform their ACDUTRA at sea or other appropriate activities to enhance their mobilization potential. Where Hospital Corps Divisions participate in unit or team training, a sufficient number of the division's officers should be present during the training period.

9. Establishment and Activation. Naval Reserve Hospital Corps Divisions are established at locations included in BuPers Instruction 5400.1 (Series). Activation and assignment of unit numerical designator shall be recommended by the District Commandant to the Chief of Naval Personnel via the Chief, Bureau of Medicine and Surgery when sufficient officer and enlisted personnel within the prescribed allowance are available and pledged to enroll. A minimum activation strength is not prescribed, but the group, in the opinion of the Commandant, should be adequate to initiate an effective Hospital Corps training program.

APPENDIX A

Hospital Corps Division Allowances

1. The officer allowance for Hospital Corps Divisions is as follows:

a. Attached Status:

Grade	Designator	Billet	Allowance
CDR	2105	Commanding Officer	1
LCDR	2105	Executive Officer	1
LT	2105	Administrative/Training Officer	3
		Total	5

b. No officer associate pay billets are authorized.

c. Officers with designator 2305, and warrant officers with designator 8175 may be assigned to any of the authorized 2105 billets.

d. Officers with designator 2205 in appropriate grade, and warrant officers with designator 8185, may be assigned to authorized 2105 billets provided at least ten (10) Group XI (dental) enlisted personnel are attached for training.

e. Nurse Corps officers may serve with appropriate duty orders in accordance with provisions of paragraph 5c.(1)(a) of BuPers Instruction 5400.1H to give instruction to enlisted personnel in nursing subjects.

2. The enlisted allowance for Hospital Corps Divisions is as follows:

a. Attached Status:

Paygrade Status	Rating	Allowance
E-7	HM	2
E-6	HM	12
E-5	HM	16
E-4	HM	20
	Total	50

b. Associate Pay Billets:

E-7	HM	1
E-6	HM	1
E-6	YN/PN	1
	Total	3

c. Group XI (dental) enlisted personnel may be assigned to authorized HM billets.

d. Personnel in pay grade E-4 of any rating may be assigned, by specific approval by the Naval District Commandant, to an HM billet for change of rating to HM or DT as appropriate. Personnel in this "in-training" status shall have their pay status terminated if they do not fully qualify for change of rating within the time limits prescribed by Commander, Naval Reserve Training Command.

e. Personnel in paygrades below E-4 may be assigned in an "in-training" status for change to a Group X (medical) or Group XI (dental) rating as appropriate. These personnel shall be allowed twelve months to effect change of rating to Hospitalman or Dentalman.

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PREVENTIVE MEDICINE

The Meaning of the Fly for Medicine

Should man compound his characteristic follies by embarking upon another war, it takes no prescience to suggest that it will not be solely with nuclear, biologic, or traditional weapons, but probably all three. Consequences of nuclear blasts will be destruction or contamination of water supplies, disruption of waste disposal systems, and contamination of food and air. The superimposition of biologic agents would make casualties incalculable. Would this actually be necessary? Not if some of the simple truths furnished by only one vector—the housefly—are considered. In peacetime, the story is impressive; in wartime—against the backdrop of uncovered excreta, unburied corpses, unrefrigerated food, undisposed refuse, and unremitting confusion—it is ominous.

To understand the importance of the fly to humankind, one must start by understanding something of the fly's sex life which Shakespeare applauded in King Lear in these terms: "and the small gilded fly does lechere in my sight. Let copulation thrive!"—with the fly it does. Egg-laying begins 4 to 8 days after copulation. The eggs are deposited in that warm odorous fecund

atmosphere for which the fly is so famous—in pig, sheep, horse, cow, and human feces. Feces are their birthright and their destiny.

Depending upon the warmth of the fecal material, the larvae will hatch from 12 hours to a few days after the eggs are deposited. After going through a succession of larval and pupal stages taking up to 20 days, the adult fly emerges and is ready for flight.

The fly's remarkable fecundity theoretically makes it possible for a couple to produce through their own capabilities and those of their children and grandchildren in one summer 325,923,200,000,000 offspring. Fortunately, no such increase actually takes place in nature. The mortality of eggs and intermediary larval and pupal stages through desiccation and cannabalism is enormous. An index of the fly's prodigious survival capabilities can be judged by the finding of 868 pupae in only one ounce of manure taken from subsurface soil. Assuming a 30% mortality at this late stage, over 600 adult flies will have emerged from this one small sample of manure; for them, the world consists of one delicacy after another.

The fly is a happy, voracious, omnivorous feeder. It delights in such morsels as sputum, fecal matter, and discharges from wounds and open sores, preferring such delicacies even to whipped cream, sugar, and other more wholesome substances.

The fly does far worse things than just get into the ointment; he gets into, or onto, pretty much everything we eat or drink. If the fly restricted himself to one group of foods or the other, he would have no particular social or medical significance; but the fact is that he evidences the same gustatory joy over the slop as over sweets.

If the fly were exclusively one or the other—a food or filth and fecal feeder—it would not have much meaning as an agent responsible for the transmission of over 30 human diseases. The reality is that the fly feels just as much at home in the kitchen as in the privy, and its frequent trips back and forth do much to explain its deadly characteristics.

The fly's natural uncouthness is compounded by its lack of native or manmade tools. It has neither table utensils nor teeth and, like an old man, it must feed on liquid materials or materials which it liquefies. Water, milk, tea, and beer are its natural foods. Solid materials must be prepared for ingestion. It goes about this preparation in a tricky way.

In addition to a stomach, the fly has a ventral crop in which it stores the semi-digested liquid food of early meals. This food can be regurgitated with apparent ease. Thus, when a fly explores a piece of chocolate candy, the appetizing surface of lemon meringue, a tender cut of meat, or buttered toast, it does so by extruding a drop of vomitus onto this food and then sucking up the sampling and the vomitus. In the event that the sample is too solid to pass through the fly's pseudotrachea, it merely adds additional vomitus until the food reaches the desired consistency. While this is happening, the fly has deposited on the food items which are abundant evidence of more recent

peregrinations in the privy. Portions of vomitus are left on every surface which the fly explores. Some scientists have observed as many as 1100 vomit specks on a pane of glass 6 inches square. In the same area there were only 9 fecal specks indicating that the fly deposits infectious material more often through its vomitus than its excreta.

The adult fly transmits infectious organisms in several ways. Micro-organisms, cysts, and parasites cling to its body hairs from which they are dislodged during locomotion or by the cleansing process which appears so humanlike in the way the fly brushes his body or "washes" his hands and feet. The sticky tenent hairs of its feet—which make possible its acrobatic antics on walls and ceiling—serve the more deadly purpose of capturing and retaining pathogens which are so casually deposited during locomotion.

By its vomitus and defecation the fly simply, regularly, and abundantly spreads pathogens. Its alimentary tract is a kind of incestuous world of its own. In the warm moist protected atmosphere of the fly's intestine, bacteria, protozoan cysts, certain helminth ova, and a number of viruses multiply and flourish only to be passed on at a later time as fecal sprinklings on food. This capacity for such speckling is fantastic—at the rate of every four and one-half minutes throughout the day.

It is little comfort to know that flies are not merely the carriers and incubators of pathogens; they often fall victim to the organisms they disseminate.

While Musca domestica lives in close proximity with humans, it is anything but domesticated. In peace—let alone war—the fly cannot be taken lightly or passed off as someone else's business. It is, as Ralph Waldo Emerson described, "as untameable as a hyena," and everyone's business—the physician, sanitarian, and the engineer most of all. (Hirsh, J., The Meaning of the Fly for Medicine: Mil. Med., 124: 733-736, October 1959)

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Genesis and Spread of a Hospital Staphylococcal Epidemic

That staphylococcal infections constitute a major problem is generally accepted whether the apparent increase in incidence is real or merely the result of current interest and publicity. Various theories have been advanced to explain the existence of staphylococcal outbreaks and, although none of them seem adequate, it is interesting to examine the present epidemic in the light of these ideas. McDermott believes that neither an increased virulency of the organism nor a failure in hospital techniques is primarily responsible, but that each year the staphylococcus is finding an increasing number of highly susceptible hosts. He cites in particular the chronically ill patient kept alive by infusions, x-ray, and steroid therapy. This observation can be readily supported by examination of the underlying diseases in the respiratory cases

listed in a table of this article. Six of the fourteen deaths associated with 52/52A/80 infection occurred in patients suffering from incurable cancers. In five of the six, the staphylococcus was considered a major cause of death. The remaining eight deaths were in persons with other advanced chronic diseases; no young or reasonably healthy person died, although several had severe respiratory infections.

The role of the asymptomatic carrier in initiating or continuing staphylococcal epidemics is controversial and probably varies according to the local situation. Reports can be found showing that epidemics have been controlled by removal of carriers of the epidemic strain, but in others control has been achieved if the carriers were ignored and standards of asepsis increased. In the present study, asymptomatic carriers seemed to have little influence on the epidemic; there was ample evidence for patient-to-patient spread of disease. Epidemiologic findings suggest that one heavily infected patient served as a continuing source of staphylococci throughout most of the epidemic. His bed had been transferred through several rooms and he was handled frequently by the personnel. It seems probable that gross amounts of staphylococci were thereby transferred to other patients.

Strain 52/52A/80 has not been reported as a cause of severe hospital outbreaks until now, but its potentialities as a major pathogen cannot be ignored. It not only has demonstrated its virulence in a general hospital situation, but also has produced severe disease in the community. Whether its effects are dependent upon coexisting influenza is not yet known. At present, other institutions in the area that appear to have high rates of 52/52A/80 are under observation. The tendency of the strain to cause disease eventually after persisting in the noses of normal carriers for long periods has been noted.

The 52/52A/80 strain of staphylococcus observed in the present outbreak apparently was capable of becoming resistant to penicillin. Isolates of 52/52A/80 early in the outbreak were sensitive to penicillin; however, on a few occasions both sensitive and resistant isolates were made from clinical material on the same patient within a few days.

Summary and Conclusions. A severe outbreak of staphylococcal disease at the Veterans Administration Hospital in Atlanta, Ga., is described. Because it began during a period of routine bacteriophage typing of staphylococci, its entire course was thoroughly documented. All sixty-three cases were caused by Type 52/52A/80 Staphylococcus aureus, which had previously been uncommon in the hospital. There were fourteen deaths related directly or indirectly to the epidemic strain.

The outbreak consisted of three distinct phases. During the first—pre-epidemic—phase, three patients with heavy chronic staphylococcal skin infections were present on a medical ward. The second—respiratory—phase began when Asian influenza appeared in the hospital. Within a short time,

many cases of staphylococcal pneumonia appeared in the same area. As influenza disappeared, the epidemic strain spread throughout the hospital, causing mostly skin disease. The pattern of spread has been reported to follow the movement of heavily contaminated patients in the hospital. In this outbreak, asymptomatic carriers were shown to be unimportant factors in spreading infection. An episode of spread into the community is documented in a family that suffered two deaths from staphylococcal pneumonia and three nonfatal staphylococcal infections.

Evidence suggests that the 52/52A/80 strain may be a particularly dangerous one. In the epidemic studied, morbidity and mortality were high, and infections occurred despite careful control measures. Resistance to antibiotics developed rapidly, and asymptomatic carriers tended eventually to acquire clinical disease. (Vogel, R. A., et al., The New England J. Med., 261: 1301-1309, December 24, 1959)

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Outbreak of Diarrheal Disease

Following is a report of an outbreak of diarrheal disease from a naval activity in California, presumably due to poisoning by staphylococcus toxin:

A special meal was served in the general mess at noon on 27 October 1959 in connection with Navy Day observance. The menu consisted of roast turkey, roast beef, baked canned ham, fried shrimp, cold cuts of meat, (bologna, salami, and cervelat), shrimp cocktail, beans, macaroni salad, carrot jello, milk, cake, and ice cream. The meal was served from 1100 to 1300 hours; approximately 1, 100 persons were served.

About 1700 hours on the same day, men began to report to the dispensary, complaining of diarrhea, nausea, vomiting, and typical symptoms of food intoxication. The majority of the patients gave a history of first developing their symptoms between 1400 and 1500 hours, or about 4 hours after eating the noon meal. Symptoms were delayed in one man until about 1800 hours, or about 6 hours after the meal. A total of 19 men were involved, of whom 3 were hospitalized for 24 hours or longer, with a diagnosis of Food Poisoning due to Staphylococcus Toxin (macaroni salad) No. 0490. All made a complete recovery.

Epidemiologic investigation revealed that the macaroni salad was the food common to all patients. Five of the men had not eaten turkey, 8 had not eaten ham, 14 had not eaten fried shrimp or shrimp cocktail as these last two items evidently had not been prepared in sufficient quantity for the entire mess. All men involved had eaten the macaroni salad. (The proportion of men who were not ill but who had eaten the macaroni salad was not stated.)

Samples of all food served were collected for examination. Staphylococcus aureus and Staph. epidermidis were isolated from the sample of

macaroni salad by the U. S. Navy Preventive Medicine Unit No. 5. The cook and messmen who prepared the salad were brought to the dispensary for physical examination, and staphylococci were isolated from throat swabs taken from the cook. The cook was relieved from duty involving food handling and was started on antibiotic therapy.

Well-chilled macaroni was mixed with the dressing about 2 hours before the start of the meal and left at room temperature. The dressing consisted for the most part of hard-boiled eggs and the standard Navy issue canned salad dressing of the mayonnaise type. The exact time when the dressing was prepared was not definitely determined, but it was prepared on the morning shift, probably about 3 to 4 hours before the meal was served. It is likely that the salad dressing had been prepared and left standing at room temperature for 4 to 5 hours by the time the last persons had been served at the noon meal.

Prompt refrigeration in accordance with Chapter 1, "Food Service Principles," of the Manual of Preventive Medicine, NavMed P-5010, may have prevented this outbreak. (CommDisBr, PrevMedDiv, BuMed)

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National Incidence and Trends of Rabies - 1959

According to the weekly telegraphic reports to the National Office of Vital Statistics, U. S. Public Health Service, Department of Health, Education, and Welfare, Washington 25, D. C., the incidence of animal rabies during 1959 was 3, 922. This is a decrease of 638 cases from the provisional number of 4,560 cases reported during the same period in 1958, representing a 14% decline in the total number of reported cases.

Substantial drops in the incidence of rabies occurred in Ohio, Indiana, Wisconsin, Minnesota, Virginia, West Virginia, South Carolina, Georgia, Kentucky, and California. Mississippi reported no cases for the year. During 1958, Mississippi reported 19 confirmed, and 9 clinical, cases of rabies. This is the first complete state in recent times to convert from an infected to a rabies-free status for an entire calendar year. The upper Rocky Mountain and Pacific Northwest continued to be rabies-free as did the New England States except for a single puzzling case in a horse in Maine.

The biggest increase in incidence was in New York State which reported 471 cases for 1959 as compared to 262 cases during 1958. This increase is the result of an epizootic of fox rabies in seven counties of previously rabies-free western New York State. This represents the worst outbreak in the state since 1946. The upper Midwest continued with high levels of skunk rabies cases. (Veterinary Public Health Newsletter, PHS, CDC, Atlanta, Ga., January 1960)

Human Leptospirosis in Florida

The Virology Section of the Bureau of Laboratories, Florida State Board of Health reports that, in 1958, 15 cases of human leptospirosis were confirmed by serologic tests in the Bureau of Laboratories. In 12 instances, the clinical diagnosis was one of aseptic meningitis of viral etiology. In the other three cases, a clinical diagnosis of leptospirosis had been made. In the light of these findings all convalescent sera of cases of aseptic meningitis in which a viral agent cannot be incriminated are subjected to examination for leptospira antibody. Following this procedure, the Florida State Board of Health, in 1959, has continued to detect, by serologic means, cases of leptospirosis among patients presenting symptoms of aseptic meningitis.

These findings confirm earlier observations by Adair, Gould, and Smadel (Ann. Int. Med., 39: 675-704, 1953) that leptospires are involved in approximately 5 to 10% of cases of aseptic meningitis. In addition, other laboratories should be stimulated to test such serums for leptospirosis when a viral etiology is not found. (Veterinary Public Health Newsletter, PHS, CDC, Atlanta, Ga., January 1960)

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Plague in 1959

In 1959, the world incidence of plague was as low as in 1958. There were fewer than 300 cases of human plague officially reported in 10 countries of Africa, America, and Asia (outside of continental China). The occurrence of "accidental" single cases in the United States and Madagascar, and of small foci in areas in Northern India and in the Union of South Africa (which were apparently free from human plague cases for one or more years) indicates that the infection still prevails among rodents in wide areas of the three continents.

The presence of plague among wild or commensal rodents was reported during the year in the Belgian Congo and Kenya in Africa; in the United States of America; and in India, Indonesia, and Iran in Asia.

On the African continent, plague cases were reported in the two areas which also reported cases in 1958, namely, in Lubero and Blukwa areas in the northeastern part of the Belgian Congo, and in two districts of the Central Province of Kenya. In the Union of South Africa, an outbreak was reported in the Uitenhage District in October 1959 where plague had apparently been absent since October 1957. In Madagascar, only single cases were recorded in 5 districts of the central plateau area. In America, active foci were located, as previously, in Loja and Chimborazo Provinces in Ecuador, and in two

provinces of Peru (Ayabaca and Hualgayoc). In Brazil, the disease was reported only in one area of the State of Bahia. Three single cases were reported in California and New Mexico in the United States.

In Asia, Burma notified the highest number of cases; of the 98 cases reported during the year, 36 occurred in four inland urban areas. In India, plague was apparently present only in two districts of the southern part of the country. In the north, an outbreak (with 15 cases) was reported in a remote mountain area of Himachal Pradesh. This state had apparently been free from plague during the last 9 years. In Indonesia, the presence of plague (with about 20 deaths) was reported in the endemic area of central Java: in the Bojolali Regency in March and in the Magelang and Wonosobo Regencies in December. (WHO, Weekly Epidemiological Record, No. 4, 29 January 1960)

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Technical Information Manual for Medical Corps Officers

The Technical Information Manual for Medical Corps Officers, NavMed P-5052 series, was initiated in 1956 for the purpose of providing medical officers with current, authoritative, professional information, primarily in the fields of infectious and tropical diseases, in ready reference form. The series will include, but not be limited to, triservice publications formerly published as Army Technical Bulletins (TB MEDs) and Air Force Pamphlets (AFPs). The majority of such publications will have been prepared and/or reviewed by the various Commissions of the Armed Forces Epidemiological Board, whose members are civilian physicians outstanding in their special fields of interest. Periodic page changes or revisions are distributed in the same way that changes are made in the Manual of the Medical Department, USN, as new professional information makes such changes desirable.

The following chapters of this manual have been published and distributed to ships and stations having Medical Corps officers regularly assigned:

NavMed No.	Title and Description
P-5052-1	Filariasis (Wuchereria), with Special Reference to Early Stages, provides Medical officers with information concerning the early stages of filariasis, with particular reference to prevention and management.

NavMed No.	Title and Description
P-5052-2 & Changes 1 & 2	Poliomyelitis, provides medical officers with the latest pertinent information concerning poliomyelitis and serves as a guide in its management.
P-5052-3	Epidemic (Louse-Borne) Typhus, provides medical officers with the latest pertinent information concerning epidemic (louse-borne) typhus and serves as a guide in its management and control.
P-5052-4	To be published.
P-5052-5 & Change 1	The Etiology, Prevention, Diagnosis, and Treatment of Adverse Effects of Heat, provides medical service officers with information essential to the development of a preventive program having as its object control of adverse effects of high temperatures on personnel, and provides a guide to diagnosis and treatment of the three clinical syndromes resulting from overexposure to heat—heat cramps, heat exhaustion, and heat stroke.
P-5052-6	Schistosomiasis (with emphasis on schistosomiasis japonica), deals with the geographic distribution, prevalence in military personnel and veterans, etiologic agent, transmission, clinical picture, diagnosis, treatment, prognosis, and prevention of schistosomiasis with emphasis on infection by schistosoma japonica.
P-5052-7	Amebiasis, covers etiology, epidemiology, pathology, clinical features, diagnosis, treatment, prognosis, and prevention of amebiasis.
P-5052-8	Coccidioidomycosis, provides information on the most recent advances in epidemiology, diagnosis, therapy, and control of coccidioidomycosis.
P-5052-9	Antibiotic Therapy; provides information on mode of action, indications for use, complications, bacterial resistance, and therapeutic principles concerned with specific antibiotics.
P-5052-10	Malaria (Clinical Features, Treatment, Control and Prevention), deals with etiology, epidemiology, pathology, diagnosis, treatment, and prevention and control of malaria.

P-5052-11 Treatment and Management of Venereal Disease, provides information on the diagnosis, treatment, and follow-up of venereal diseases.

P-5052-12 Q Fever, provides information on epidemiology, clinical features, diagnosis and treatment, and preventive measures of Q fever.

P-5052-13 The Management of Pulmonary Tuberculosis, is concerned with diagnosis, classification, treatment, rehabilitation, and disposition of tuberculous patients.

P-5052-14 Viral Infections of the Central Nervous System, deals with epidemiology, clinical features, differential diagnosis, and laboratory procedures in some of the viral meningo-encephalitides.

P-5052-15 Immunization, provides information on purpose, standards, shipment and storage, precautions, and use of routine and special immunizing preparations.

These publications may be requisitioned from appropriate forms and publications cognizance "I" supply distribution points in accordance with current instructions. (CommDisBr, PrevMedDiv, BuMed)

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